

REMARKS

In the Office Action the Examiner noted that claims 1-34 are pending in the application. The Examiner rejected claims 1-10, 18-22, 33, and 34, and objected to claims 11-17 and 23-32. By this Amendment, claims 1, 4, 7-9, 18, 20, and 33-34 have been amended, and claim 2 has been cancelled without prejudice or disclaimer. No new matter has been presented. Thus, claims 1 and 3-34 remain pending in the application. The Examiner's rejections are traversed below, and reconsideration of all rejected claims is respectfully requested.

Claim Rejections Under 35 USC §103

In item 2 on pages 2-3 the Examiner rejected claims 1-3, 7, and 9 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,775,216, issued to Kelly et al. (hereinafter referred to as "Kelly") in view of U.S. Patent Application Publication No. 2003/0142706, issued to Kartner et al. (hereinafter referred to as "Kartner"). The Applicant respectfully traverses the Examiner's rejection of these claims.

Kelly

Kelly discloses a method of writing data on a disk, the method including writing a first subset of data with a write power that is adjusted in a closed loop operation, measuring the write power used to write the first subset of data, and using this measured value to control a write power with an open loop operation to write a second subset of data after a write interruption (Column 2, Lines 37-50). By using the open loop control operation after a normal write operation has been interrupted, the laser power can increase from a read level to a write level in only 3 to 10 nanoseconds, as opposed to the approximately 10 milliseconds required in the closed loop control operation (Column 7, Line 54 through Column 8, Line 18).

Kartner

Kartner discloses a detection means and a parameter varying means for a laser with a mode-coupling means and a decoupling means, the detection means being provided for detecting a value of the emitted laser and the parameter varying means being provided for varying at least one parameter in response to the detected value (Abstract). These means are provided to control high-frequency fluctuations of the laser, so that spiking and relaxation oscillations can be controlled to the net laser gain by means of coupling the laser output (Paragraph [0021]). This coupling is utilized in mode-coupled lasers.

The Present Claimed Invention Patentably Distinguishes Over the Cited References

Claim 1 of the present application, as amended, recites “generating an error voltage between an output voltage of the laser diode sampled during an automatic power control period and a reference voltage, the output voltage being an effective output voltage within a predetermined range; and performing proportional-integral processing on the error voltage to generate a compensated control voltage and applying the compensated control voltage to the laser diode.” The Applicant respectfully submits that at least these features are not disclosed in the cited references.

The Examiner states that “Kelly discloses processing the error voltage (302) into a compensated control voltage and applying it to a laser diode (70), but does not disclose using proportional-integral processing on the error voltage.” The Examiner then goes on to state that “Kartner discloses performing proportional-integral processing (para. 46) on a voltage signal to generate a compensated control voltage for improved laser output stability (para. 30).”

The Applicant respectfully submits that Kartner does not disclose “performing proportional-integral processing.” Although the Examiner has characterized Paragraph [0046] of Kartner as disclosing the performance of proportional-integral (PI) processing, it is apparent from the cited paragraph that Kartner actually discloses a proportional-integral-derivative (PID) member 8b (Figure 1) to emit a parameter varying signal for the laser apparatus. “Said parameter varying signal comprises a portion which is proportional to the deviation, a portion integrating the deviation and a portion corresponding to a time variation of the deviation” (Paragraph [0046]). It is well known to one skilled in the art that PI processing is not tantamount to PID processing. Further, the compensated control voltage recited in claim 1 of the present application does not include a portion corresponding to a time variation of the deviation. Therefore, at least the derivative controller component of Kartner distinguishes the PID member 8b as not performing proportional-integral processing as claimed in claim 1 of the present application.

Also, the error voltage recited in claim 1 of the present application is generated by a difference between an effective output voltage within a predetermined range of the laser diode and a reference voltage, which is neither disclosed nor suggested in the cited references.

Further, even if the cited references did combine to disclose all of the features of claim 1 of the present application, and the Applicant respectfully submits that they do not, there is no motivation to combine the references. MPEP § 2142 states that “[w]hen the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the

Examiner to explain why the combination of the teachings is proper." Here, the Examiner has simply stated, with no evidence to support the assertion, that "[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to use the processing steps disclosed in Kartner with the processing steps disclosed in Kelly for improved laser output stability as disclosed in Kartner." The Examiner is required to present actual evidence and make particular findings related to the motivation to combine the teachings of the references. In re Kotzab, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); In re Dembiczak, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." Dembiczak, 50 USPQ2d at 1617. "The factual inquiry whether to combine the references must be thorough and searching." In re Lee, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002) (citing McGinley v. Franklin Sports, Inc., 60 USPQ2d 1001, 1008 (Fed. Cir. 2001)). The factual inquiry must be based on objective evidence of record, and cannot be based on subjective belief and unknown authority. Id. at 1433-34. The Examiner must explain the reasons that one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious. In re Rouffet, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998).

The Applicant respectfully submits that the references do not support the Examiner's assertion that the combination would have been obvious, for at least the following reasons. As Kelly discloses a method of writing data on a disk such that a write power can be quickly controlled in order to pick up after an interruption in the writing, there would be no reason for one of ordinary skill in the art to combine the disclosure of Kelly with Kartner, which discloses a method of varying a parameter of a mode-coupled laser to control spikes and relaxation oscillations. Therefore, as Kartner discloses a parameter varying process used with a mode-coupled laser, which is different from the laser diode used in Kelly, the two references actually teach away from one another. Thus, not only is there no motivation to not combine the two references, there is actually evidence that the two references teach away from, and therefore would apparently preclude, the combination of the two.

Therefore, as claims 1, 7, and 9 all recite "performing proportional-integral processing on the error voltage," the Applicant respectfully submits that claims 1, 7, and 9 patentably distinguish over the cited references for at least these reasons.

Claim 3 depends from claim 1 and includes all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claim 3 also patentably distinguishes over the cited references.

In item 3 on pages 3-5 of the Office Action the Examiner rejected claims 4-6, 8, and 10 under 35 U.S.C. §103(a) as being unpatentably over U.S. Patent No. 5,222,072, issued to Oku (hereinafter referred to as "Oku") in view of Kelly, and further in view of Kartner.

The Examiner states that "Oku does not disclose generating an error voltage or proportional integral processing," but that the deficient feature is disclosed in Kelly and Kartner. However, as previously discussed, Kartner does not disclose performing proportional-integral processing, nor is there any motivation to combine the cited references. Further, as Oku is not drawn to an apparatus to simultaneously read data from multiple tracks of a disc, the Applicant respectfully submits that there is no motivation to combine Oku with the previously discussed references, and actually teaches away from the combination.

Therefore, as amended claims 4 and 8 both recite "performing proportional-integral processing on the error voltage", as well as "generating an error voltage between a reference voltage and an effective output voltage within a predetermined range extracted from digital output voltages sampled during the automatic power control period", the Applicant respectfully submits that claims 4 and 8 also patentably distinguish over the cited references for at least these reasons.

Claims 5-6 depend from claim 4 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 5-6 also patentably distinguish over the cited references.

Claim 10 depends from claim 9 and includes all of the features of that claim plus additional features which are not taught or suggested by the cited references. As described in the previous section of this Response, claim 9 patentably distinguishes over the cited references. Therefore, it is respectfully submitted that claim 10 also patentably distinguishes over the cited references.

§103 Rejections Incorporating Chang

In item 4 on pages 5-6, the Examiner rejected claims 18, 20-21, and 33-34 under 35 U.S.C. §103(a) as being unpatentably over U.S. Patent 5,276,781, issued to Chang et al. (hereinafter referred to as "Chang") in view of Kelly, and further in view of Kartner.

The Examiner states that Chang does not disclose "the specific recited limitations concerning the power control module," and goes on to state that "Kelly discloses an automatic power control module" and "Kartner discloses performing proportional-integral processing on a voltage for improved laser stability." However, as previously discussed, Kartner does not disclose performing proportional-integral processing, nor is there any motivation to combine the

cited references. Further, as Chang is not drawn to an apparatus to simultaneously read data from multiple tracks of a disc, but rather to a laser printer controller, the Applicant respectfully submits that there is no motivation to combine Chang with the previously discussed references, and actually teaches away from the combination.

Therefore, as claim 18 recites "performing proportional-integral processing on an error voltage between the effective output voltage and a reference voltage," and claims 20, and 33-34 all recite "the output voltage being an effective output voltage within a predetermined range, and performing proportional-integral processing on the error voltage," the Applicant respectfully submits that claims 18, 20, and 33-34 also patentably distinguish over the cited references for at least these reasons.

Claim 21 depends from claim 20 and includes all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claim 21 also patentably distinguishes over the cited references.

Remaining §103 Rejections

In item 5 on page 7 of the Office Action the Examiner rejected claims 19 and 22 under 35 U.S.C. §103(a) as being unpatentable over Chang in view of Kelly and Kartner as referenced above, and further in view of Oku.

Claims 19 and 22 depend from claims 18 and 20, respectively, and include all of the features of those claims plus additional features which are not taught or suggested by the cited references. As discussed above, the cited references do not combine to disclose the depended upon claims. Therefore, it is respectfully submitted that claims 19 and 22 also patentably distinguish over the cited references for at least these reasons.

Allowable Subject Matter

In item 6 on page 8 of the Office Action the Examiner objected to claims 11-17 and 23-32 as being dependent upon a rejected base claim, but indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 11-17 depend from claim 9, and claims 23-32 depend from claim 20. As discussed above, claims 9 and 20 both patentably distinguish over the cited references. Therefore, as claims 11-17 and 23-32 include all of the features of their respective base claims plus additional features which are not taught or suggested by the cited references, it is

respectfully submitted that claims 11-17 and 23-32 also patentably distinguish over the cited references.

Summary

In accordance with the foregoing, claims 1, 4, 7-9, 18, 20, and 33-34 have been amended, and claim 2 has been cancelled without prejudice or disclaimer. No new matter has been presented. Claims 1 and 3-34 are pending and under consideration.

There being no further outstanding objections or rejections, it is respectfully submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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